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Illustrated Wood-Worker.

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ILLUSTRATIONS.

Design for a Sideboard; Handrailing; Practical Carpentry; Ottoman Sofa; Small Japanese Cabinet; Lessons in Projection; Drawing-room Chair; Examples of Swiss Architecture.

Our Illustrations.

ON the title-page this month we show a design for a sideboard. This design was prepared by F. W. Fieder, and is simplicity itself; any amateur, having the necessary tools and a small turning lathe, ought to be able to make a sideboard from this design. The standards in front would require to be taken out of stuff $1\frac{3}{4}$ " x 6" and cut down in their narrowest section, to about 3" wide. The fronts can be shaped out with a Barnes' foot scroll-saw, and afterwards chamfered and finished off. The ends are framed together and panelled. The railing on the top is formed of small turned balusters, with pins formed on the upper and lower ends to fit into holes bored in the shelves and rails. The doors are framed in the ordinary way, with the edges of the stiles and rails chamfered at the panels. The wide marginal mouldings on the lower door panels are formed of thin stuff, mitred at the corners and glued in.

The back may be enclosed with thin matched stuff about three or four inches wide, beaded at the joints. The whole construction is simple and easily understood. Further information can be obtained, if needed, by addressing the editor.

Plate 66 is illustrative of the Articles on "Sectorian Hand Railing." Full explanations will be found on page 134.

On Plate 67 we show the best methods of obtaining the lengths and bevels for all kinds of rafters for a variety of hip roofs. This is an excellent plate for the carpenter. Full explanations are given on page 134.

On Plate 68 we show an Ottoman sofa, designed by Edward Dewson, architect and art designer, of Boston.

Plate 69 was also designed by Mr. Dewson. The construction is very simple, and the whole design is honest and pure, and if executed in appropriate woods, will make a very handsome piece of furniture.

Plate 70 is another of those graphical methods of solving difficult problems in practical carpentry that have recently been furnished us for the benefit of our readers, by Mr. Robert Riddell. This is an exceedingly useful problem, and should be thoroughly mastered by all young mechanics who desire to be adepts in the art of Hand-railing.

On Plate 71 we show a very handsome design for a drawing-room chair which is intended to be finished in black and gold. The design was prepared by Mr. Dewson, of Boston, and we are sure it will be appreciated by many of our patrons.

We have frequently been asked to publish examples of Swiss architecture, and details of interior finish. In compliance with this request we have reproduced on Plate 72, 13 examples of brackets and cornices in the Swiss style; we may add, also, that we have instructed our artist to prepare one page of designs of a similar nature to this, for each remaining month of the current year.

THAT the WOOD-WORKER would make a first-class vehicle for advertising is made manifest by the fact that since we offered the "cheap drawings" for sale through its columns, the demand for them has been so great that our large stock has been completely sold out, and we are continually obliged to refuse orders which come pouring in upon us from every quarter of the globe. We also advertised "DRAWINGS FOR THE MILLION," and, although we had many thousands of copies of these on hand, they are rapidly disappearing; and as we have employed no other medium than the WOOD-WORKER, for making public our desire to sell these drawings, it is quite evident that it is to its agency we owe our numerous sales.

THE month of August has been unusually prolific of kind words and more substantial proofs of high regard in which our efforts are appreciated by our patrons. The public prints, too, have shown us many instances of

kindness and appreciation, and have actually done us good service by their favorable notices, for which they have our heartiest thanks.

WHILE speaking of ourselves, it may be as well to say to those of our readers who intend procuring full sets of our "Drawings for the Million," that our stock is rapidly disappearing, and we cannot promise to furnish complete sets after the expiration of the present month; parties, however, who are desirous of obtaining the eleven packages, and who have not the full amount of money to send for them all at once, can, by sending what money they may have in hand, and expressing a desire to have all the drawings complete, have them held for them *one month*. That is, we will send packages for the amount of money sent us, and will hold the remaining packages over one month, when, if the balance of eight dollars is sent, we will forward them to the person who sent the order. We make this offer because we have had a number of orders for single packages, where the parties ordering have expressed a desire to obtain the whole set, but did not have sufficient means at the time to procure them, and have since sent us orders for other packages. Our proposition will enable buyers of this class to obtain the whole set at the lowest rates. Orders should be sent at once, as the supply may give out any day.

IN a recent communication to the Mulhausen Gewerbeverein, Herr Schoen said he had tried to give oaken objects an old look by rubbing aniline oil on them, but without good results; the wood took a color which rather reminded one of mahogany, and was but very superficial. On the other hand he got a dark-brown tone similar to that of old oak by saturating the wood first with a solution of aniline salt (sulphate of aniline), and then with caustic soda. Similar results were obtained with walnut and plum-tree wood, etc. Caustic potash alone, of course, gave a somewhat similar action, but inferior to that with simultaneous use of aniline salt. Herr Schoen further attempted to color wood black by treating it successively with aniline salt, bichromate of potash and caustic soda, the wood being dried after each operation. The color thus obtained is very regular. The experiment succeeded with all the kinds of wood tried—the most important home species and some foreign. These coloring methods are quickly and easily carried out, and are very inexpensive.

THE largest furniture manufactory in St. Louis is a coöperative concern, each of the 110 skilled workmen being a holder of at least one share, and not more than twenty, at \$25 each. They are chiefly German Socialists. Only ten per cent of the capital was paid in at first, credit being obtained for

about \$20,000 of wood-working machinery, and the dividends have since been sufficient to meet the assessments as they fall due. The men receive ordinary wages for their work, and thus far there has been no serious dispute in the management, which is vested in a committee.

AN interesting exhibition of furniture, antiquities, etc., has been held at Munster, the capital of Westphalia. The exhibition comprises furniture, tapestry, pictures on wood and metal panels, old wood-carving, glass-painting and porcelain, lace, etc. A whole series, amounting to nearly 700 pieces of church plate, etc., arranged according to date, and including 70 chalices dating from the eleventh to the seventeenth century, and over 80 reliquaries and some bishop's staves, were on view.

AMONG the exhibits forwarded from Auckland, New Zealand, to the Sydney Exhibition, will be a fine collection of the beautiful ornamental woods of the province of Auckland. The specimens will include five varieties of mottled kauri, among which is one known as the fern-leaf variety—a beautiful specimen of this rare sort. There are also samples of mottled totara, puriri, and rewarewa. In ornamental woods for cabinet purposes there is no country in the world which produces greater variety or specimens of greater beauty than the province of Auckland. The half of each slab of wood to be exhibited is to be polished, and the other half is to be left in its natural state.

THE making of wooden shoes has become an industry of considerable magnitude in France. They are produced there to the extent of 4,000,000 pairs annually. In Alsace and Barriers they are made by machinery, and in Lozere by hand. In the last named province 1700 persons are engaged in the manufacture, and the yearly product is 564,000 pairs.

WE are assured that the furniture manufacturers of New York are greatly encouraged at the prospects of the fall trade, after having received and digested the voluminous and very valuable advice so kindly tendered by the champion modest men of Boston and Chicago.

IN one week recently the furniture exports from New York amounted to \$2016 to the Dutch West Indies; \$2488 to Glasgow; \$1094 to the British West Indies; \$885 to the United States of Colombia; \$610 to the Argentine Republic; and \$3318 to other twelve ports, making a total of \$10,371.

ONE feature of the increasing exportation of American manufactures is machinery-made joinery. We have exported to England in a single year as many as 100,000 doors.

SEND two postage stamps (six cents) to this office for a copy of "Hints on Estimating," a pamphlet of thirty-two pages. It gives the prices of labor and material, for all kinds of work connected with the building trades.

OUR eleven packages contain over 5000 hints, rules, tables and recipes, of great value to the carpenter, joiner, builder or contractor.

Lessons in Projection.

By ROBERT RIDDELL, TEACHER OF THE ARTISAN CLASS IN THE HIGH SCHOOL, PHILADELPHIA.

Plate 70.

ON the problem shown in this plate rests the true theory of hand-railing, and the student should thoroughly master it in every particular. The correctness of the method shown for obtaining the ellipse N may be proved by cutting the lines XXXX through the paper, and then folding over the lines OOOO, and then raising the cut parts until S A stands perpendicular over the plan D. The curve N will then stand directly over the quarter circle on the plan. The methods of finding the long and short diameters, and the foci of the ellipse, have been explained in previous issues of the WOOD-WORKER. Pins are placed in the foci in order that the ellipse may be described by the aid of a thread or fine string; this process will be readily understood by referring to Fig. 1, Plate 22, March number.

We would advise the student to copy this plate entire two or three times, or until the principle involved is thoroughly understood, and the knowledge gained will doubly repay the trouble.

The Sectorian System of Hand-Railing.

NINTH PAPER.

Plate 66.

THIS plate exhibits a full circle stairs; and the well-hole enclosed with tangents, either for quadrant or octagon angles, by which wreaths in either four or eight pieces can be obtained. Where all the divisions are made equal, the same moulds, both face and falling, will answer for any section of rail. The moulds are applied, and all the twists and ramps obtained, as laid down in preceding examples. The framing is as easily put up in this example as the one shown in former plates, and is the most economical of any I have ever used in my practice, and equally as substantial.

Fig. 1 shows the ground plan, and had best be laid down on the floor where required to be built.

Fig. 2 is the stretch-out of the wreath piece for one fourth of the circle, and is best

where it is the desire to avoid many joints, though I do not see the same objection to joints that many do, when properly made. I would prefer a joint to a cross-grained piece in a wreath always.

Fig. 3 is the quarter-wreath piece, obtained in the usual way, with its tangents and chord line, segment, etc.

Fig. 4 is the lower wreath face mould, with the tangents as obtained from A, B, C, Fig. 1, and drawn as shown on this figure. The lower end of Fig. 2 gives an idea of the falling ease, and is the shape of the centre falling mould, the convex and concave falling moulds being obtained as in former examples.

Practical Carpentry.

HIP-ROOFS.

IN its most simple form the *hip-roof* is a quadrilateral pyramid, each triangular side of which is a *hip*, and the rafter in each angle is a *hip-rafter*. The *common rafters* which lie between the hip-rafters in the planes of the sides of the roof, and which, by abutting on the hip-rafters, are necessarily shorter than the length of the sloping side, are called *jack-rafters*.

The things required to be determined in a hip-roof are these, viz. :

1. The angle which a common rafter makes with the plane of the wall-head—that is, the angle of the slope of the roof.
2. The angle which the hip-rafters make with the wall head.
3. The angles which the hip-rafters make with the adjoining planes of the roofs. This is called the backing of the hip.
4. The height of the roof.
5. The lengths of the common rafters.
6. The lengths of the hip-rafters.
7. The length of the wall-plate contained between the hip-rafter and next adjacent entire common rafter.

The first, fourth, fifth, and seventh of these are generally given, and then all the others can be found from them by construction, as is about to be shown.

The plan of a building and the pitch of the roof being given, to find the lengths of the rafters, the backing of the hips, and the shoulders of the jack rafters and purlins :

PLATE 69.—Let A B C D (Fig. 1) be the plan of the roof. Draw G H parallel to the sides A D, B C, and in the middle of the distance between them. From the points A B C D, with any radius, describe the curves *a b*, *a b*, cutting the sides of the plan in *a b*. From these points, with any radius, bisect the four angles of the plan in *r r r r*, and from A B C D, through the points *r r r r*, draw the lines of the hip-rafters A G, B G, C H, D H, cutting the ridge line G H in G